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ABSTRACT

Presented are the results of a survey conducted in 1983 to determine the number and content of energy courses and seminars being offered within American departments of geography. Questionnaires were mailed to the 215 institutions on the mailing list of the Energy Specialty Group of the Association of American Geographers. Responses indicated that a total of 30 courses were being offered at 25 campuses (of these, one response came from Canada and one from the United Kingdom). Information concerning the courses is provided in table format: instructor, institution, course title, type of course, structure of course, text or type of instructional materials used, and comments. As might be expected in a newly emerging teaching area, there was a wide variety in course titles and subject matter. An equally large variety was evidenced in the choice of textbooks. In all, 13 different texts were used (these are listed). Information was also received on at least two attempts to set up interdisciplinary programs on energy topics in which geography departments might be involved. Two appendices are included: a map showing the location of geography departments offering energy courses and a listing of references and course materials valuable for teaching energy courses. (RM)

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THE DEVELOPMENT OF ENERGY COURSES AT AMERICAN UNIVERSITIES

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The increasing concern over the past decade regarding the sufficiency of energy supplies has been reflected in the emergence of new geography courses that are focused on this subject. Prior to the 1973 oil embargo, energy topics were usually embraced merely as one unit within traditional natural resource conservation courses. Reflecting the appearance of these new specialized courses and the increased concern with energy generally, there was formed in 1980 an Energy Specialty Group within the Association of American Geographers. This paper reviews the nature of the current course offerings within this newly developing sub-field of geography.

Through the auspices of the Energy Specialty Group (E.S.G.), a survey was conducted early in 1983 to determine the number and content of energy courses and seminars being offered within American departments of geography. Information requested included the title and content of any such courses, name of instructor, main text(s) used, a copy of the course outline, and any other significant information concerning the course (team taught, etc.). The survey was conducted among those on the

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mailing list of the Energy Specialty Group, currently numbering approximately 215.

The survey responses indicated that a total of approximately thirty courses were being offered at 25 campuses (of these, one response came from Canada and one from the U.K. One respondent was a visiting professor offering his course on a one-time basis; this course was not included in the compilation). The results of the survey are summarized in Table 1.

The compilation in Table 1 was limited to courses that deal fairly exclusively with energy; courses broadly treating of natural resources which contain a section on energy are numerous and were not included. The "x"s in the columns headed "Type of course" and "Structure" were inferred by the compiler based on the information and descriptions sent by the respondents. Apologies are extended for any conclusions drawn that do not accurately reflect the true nature of the course. It is acknowledged that Table 1 is probably incomplete. It reflects only that information sent to the compiler by respondents to the E.S.G. survey. It is possible some E.S.G. members who offer energy courses may not have responded, although two follow-up appeals were made to try to minimize this. More likely, some energy courses may be offered by instructors not affiliated with the Energy Specialty Group. A subsequent effort may be made to reach such persons.

As might be expected in a newly emerging teaching area, there was a wide variety in course titles, subject matter, and choice of texts. There appears at present to be little

TABLE 1

Association of American Geographers - Energy Specialty Group

COURSE OFFERINGS BY GEOGRAPHERS ON ENERGY TOPICS

Prepared by Philip R. Pryde for the Energy Specialty Group, April 1983

Instructor	Institution	Course Title	Type of course ^a								Structure ^b					Text ^c	Comments
			1	2	3	4	5	6	7	8	1	2	3	4	5		
Berardi, Gigi	Univ. of Maryland, Baltimore Cnty	Geog. of Energy	x	x		x	x	x			x	x				R&F + Arts.	
Bradbeer, John	Portsmouth Poly- tech. U. (JK)	Energy: Geographical Perspectives	x	x	x	x	x	x	x		x					Arts.	
Calzonetti, Frank	West Virginia U.	Geographical Perspec- tives on Energy	x	x	x				x		x	x				R&F + Arts.	
Chapman, J. D.	U. of British Columbia (CAN)	Geog. of Energy	x	?		x	x				x	x				?	
Cook, Earl	Texas A&M Univ.	Man and Energy	x	x	x		x	x	x		x	x		x		Cook	
Fitzsimmons, Allan	George Washington Univ.	Geog. of Energy Resources	x	x	x		x	x			x		x				
Forbes, Charles	Calif. State Univ. Dominguez Hills	Energy	x	x		x	x	x			x	x				?	
"	"	"	x			x	x		x			x				Lovins	Course title being changed
"	"	"															
Fowler, Gary	Univ. of Illinois at Chicago	Energy and Environ- mental Policy		x	x	x	x		x		x	x				Axel. + Arts.	
Frank, Ken	Comm. Revit. T.C., Indianapolis	Energy Conservation in Housing Rehabilitation	x		x		x		x		x					?	On home energy conservation
Kale, Steven	Oregon State Univ.	Spec. Topics in Econ. Geography	x				x		x		x	x				Arts.	On renewable energy
Kooser, Jaime	Univ. of Washington	Geog. of Energy	x	x	x		x				x	x	x			S&Y, others	Variable content
Lindberg, James	Univ. of Iowa	Energy in Contemporary Society	x	x	x		x	x			x	x		x		S&Y	Team taught
Lowe, B. Thomas	Ball State Univ.	Energy Resources	x	x		x	x	x			x	x				?	
Luten, Dan	U. of Calif., Berkeley	? - Geog. 135	x	x		x	x	x			x	x	x		x	AAAS	Based on 1976 course descrip.

<u>Instructor</u>	<u>Institution</u>	<u>Course Title</u>	<u>Type of course</u> ^a								<u>Structure</u> ^b					<u>Text</u> ^c	<u>Comments</u>
			1	2	3	4	5	6	7	8	1	2	3	4	5		
Macey, Susan	Univ. of Kentucky	Energy for the Future	x	x	x		x				x					B&L, others	1st taught in 1983
Ojala, Carl	Eastern Michigan U.	Energy Awareness	x	x			x	x			x	x				?	
Pasqualetti, Mike	Arizona State U.	Intro. to Study of Energy	x	x			x		x		x	x				Various	
"	"	Energy and Environment	x	x			x	x			x	x				Arts.	
Price, Edward	Univ. of Oregon	Geog. of Energy	x	x			x	x			x	x	x			Cook	
Pryde, Phil	San Diego State U.	Energy Resources	x	x			x	x	x		x	x				Fowler	New course No. (571) in 1983
"	"	Seminar on Energy and Environment					x	x	x	x	x	x				Pryde	Included 3-day field trip
Sawyer, Stephen	Univ. of Maryland	Energy Resources and Planning	x	x	x	x	x	x			x	x				S&Y, others	
"	"	Energy Resources and the Environment	x	x			x		x		x	x				Siever, others	
Sommers, Larry	Michigan State U.	World Energy Patterns and Issues	x	x			x	x			x	x	x			NC, others	
Talarchek, Gary	State U. College, Geneseo, N.Y.	Energy, Environment, and Society	x	x	x	x		x			x			x		Miller	
Wolf, Larry	Univ. of Cincinnati	?	x								?					?	
Zeigler, Donald	Old Dominion Univ.	Geog. of Energy	x	x			x	x			x	x				S&Y, others	
Zimmerman, Carol	Rutgers Univ. (NJ)	Energy Resource Management	x	x			x	x	x		x	x				Schw.	Emph. on student research

NOTES: ^a Type of Course: 1=undergraduate; 2=graduate; 3=comprehensive; 4=energy planning; 5=energy and environment; 6=energy futures, alternative energy, conservation; 7=supplies, consumption, reserves; 8=technical aspects. These denote major emphases of the course being described.

^b Structure: Course is organized mainly: 1=topically; 2=regionally or spatially; 3=by energy type; 4=historical development; 5=course is team taught.

^c Main text used: "Arts."=articles assigned; for titles see Table 3.

agreement on the name for such energy courses, undoubtedly reflecting a fair amount of variability in course structure. The most frequently occurring title, perhaps predictably, was "Geography of Energy" (five courses). A key word analysis of the course titles, and of the texts used, is presented in Table 2.

An equally large variety is evidenced in the choice of texts. In all, thirteen different texts were used, although the concept of "textbook" is imprecise and gets into gray areas involving assigned readings out of a text, short monographs or compendiums, etc. In addition, many courses utilized collections of articles in part or in whole as the reading material for the course. The texts used in those courses that appeared to place primary reliance on a formal textbook are summarized in Table 3.

Although not explicitly requested in the survey, information was received on at least two attempts to set up interdisciplinary programs on energy topics in which geography departments might be involved. One was an interdisciplinary Master of Science in Energy Planning at California State university at Dominguez Hills; the other an undergraduate minor being proposed at San Diego State University. As of October 1983, neither proposal had successfully completed the trip through the required administrative approval procedures.

Two appendices have been included. A map showing the location of geography departments offering energy courses (i.e., those responding to this survey) has been inserted as Appendix 1. Also, in compiling the survey results, numerous examples of

TABLE 2

KEY WORD ANALYSIS OF COURSE AND TEXT TITLES

<u>Term</u>	<u>Courses</u>	<u>Texts</u>
Awareness	1	
Conservation	1	
Crises		1
Energy	26	13
Environment(al)	5	4
Future	1	2
Geographical	2	
Geography	7	
Housing	1	
Introduction	1	
Issues	1	
Land use		1
Man	1	1
Management	1	
Nonconventional		1
Paths		1
Patterns	1	
Perspectives	2	1
Planning	1	
Policy	1	1
Renewable	1	
Resources	6	1
Seminar	1	
Society	2	1
Soft		1
Special topics/ report	1	1
Technology		1
World	1	

(n = 27) (n = 13)

Source: Tables 1 and 3.

TABLE 3. Texts Used with Courses Listed in Table 1.

<u>Author</u>	<u>Title</u>	<u>Number of Courses Adopting:</u>	<u>Code used in Table 1:</u>
Axelrod, Regina S. (ed.)	Environment, Energy, and Public Policy (Lexington, 1981)	1	Axel.
Burchell, Robert and Listoken, David	Energy and Land Use (Rutgers, 1982) 1982)	1	B&L
Cook, Earl	Man, Energy, and Society (Freeman, 1976)	2	Cook
Fowler, John	Energy and the Environment (McGraw-Hill, 1975)	1	Fowler
Hammond, Allen and Metz, William	Energy for the Future (AAAS, 1976)	1	AAAS
Lovins, Amory	Soft Energy Paths (Ballinger, 1977)	1	Lovins
Miller, G. Tyler	Energy and Environment: Four Crises (Wadsworth, 1976)	1	Miller
National Geographic Society	Energy: A Special Report (N.G.S., 1981)	1	NG
Pryde, Philip R.	Nonconventional Energy Resources (Wiley, 1983)	1	Pryde
Ruedisili, Ron and Firebaugh, Morris	Perspectives on Energy (Oxford, 1982)	2	R&F
Schwaller, Anthony	Energy Technology (Davis, 1980)	1	Schw.
Siever, Raymond (ed.)	Energy and Environment (Freeman 1980)	1	Siever
Stobaugh, Robert and Yergin, Daniel	Energy Future (Random House, 1979)	4	S&Y

reference or source materials valuable for teaching energy courses came to light. A sampling of these materials has been included as Appendix 2.

As noted earlier, Table 1 is most certainly incomplete. The Energy Specialty Group would like to carry out a continuing update of Table 1, and solicits information that anyone might be able to contribute regarding other energy courses being taught in the United States and Canada. The author of this report encourages its readers to provide him with any such information of which they may have knowledge.

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ENVIRONMENTAL ANALYSIS
LAND USE PLANNING

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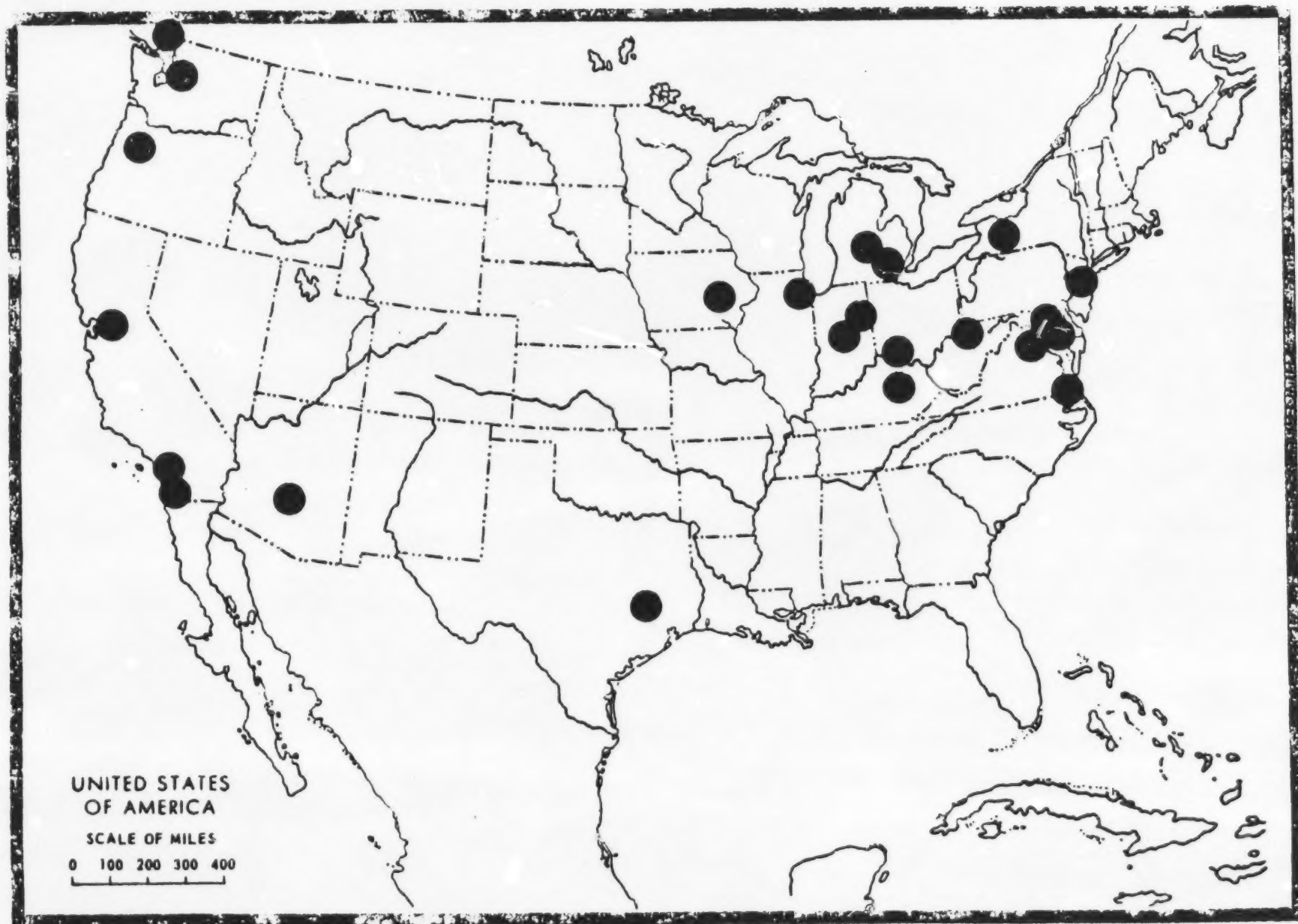


Figure 1: Location of geographers responding to the AAG/ESQ's survey on energy courses.

Appendix 2. References and course materials for energy courses.

The best reference for energy source material is Jackalie Blue's bibliography*, prepared for the 1982 AAG/ESG meeting. Some other sources are:

Blue, J. and Archart, J. "A Pocket Reference of Energy Facts and Figures", Oak Ridge N.L., 1980.

Bloch, C. Federal Energy Info. Sources and Data Bases, Noyes Data Corp. 1979.

Crabbe, D. and McBride, R. The World Energy Book, NY: Nichols, 1978

Messenger, R.A. "Abstracts of Energy Education Materials for College Classes", Tallahassee: Gov. Energy Office, 1980.

Messenger, R.A. "Energy Education at the University Level", Tallahassee: Governor's Energy Office, 1980.

National Solar Energy Directory, U.S. Government Printing Office, 1981.

Pryde, P.R. "The Energy Problem" (60 transparency slide show with text), N.C.C.E., revised 1982.

Schiff, Gary The Energy Education Catalog (Programs in American Colleges and Universities). NY: Academy for Educational Development, 1981.

* Blue, Jackalie. "Geographic Perspectives on Energy: A Bibliography", AAG/ESG, April 1982.

See also the announcement in the January 1983 AAG Newsletter regarding the workshop on Field Studies in Energy Education, 26 June to 1 July 1983 in Zanesville, Ohio.